

**I.B.2.N.a.27. *QUERCUS ALBA* (*QUERCUS RUBRA*, *CARYA* SPP.) FOREST ALLIANCE**  
White Oak (Northern Red Oak, Hickory species) Forest Alliance

Hopewell Furnace name: **Dry Oak–Mixed Hardwood Forest**

**Concept:** This alliance is widely distributed in the eastern United States and portions of adjacent Canada and includes dry mesic to mesic upland oak forests dominated by *Quercus alba* and/or *Quercus rubra*, with or without *Carya* species. Stands are 15-25 m tall, with a closed, deciduous canopy. The shrub and herbaceous strata are typically well-developed. *Quercus alba* usually dominates the stands, either alone or in combination with *Quercus rubra* (especially on moister sites) and sometimes *Quercus velutina* (especially on drier sites). Some associations in this alliance are dominated by *Quercus rubra*, although *Quercus alba* is usually also a canopy component. *Carya* species (particularly *Carya alba*, *Carya glabra*, or *Carya ovata*) are typically common either in the canopy or subcanopy. In the southeastern United States, this alliance covers dry-mesic forests of the Piedmont, low Appalachian Mountains, and the Cumberland and Interior Low Plateau, and mesic oak–hickory forests of the Blue Ridge and the interior highlands of the Ozarks and Ouachita Mountains. Associated species include *Carya glabra*, *Carya ovata*, *Carya alba*, *Fraxinus americana*, *Acer rubrum*, *Acer leucoderme*, *Cornus florida*, *Nyssa sylvatica*, *Ostrya virginiana*, *Calycanthus floridus*, *Pyrularia pubera*, *Tilia americana* var. *caroliniana*, *Oxydendrum arboreum*, and others. This alliance is found throughout the midwestern United States on moderately rich, upland sites. Typical associates include *Fraxinus americana*, *Ulmus americana*, *Tilia americana*, *Acer saccharum*, *Acer rubrum*, and more locally, *Quercus macrocarpa* and *Quercus ellipsoidalis*. Stands are found on gentle to moderately steep slopes on uplands and on steep valley sides. The soils are moderately deep to deep and vary from silts to clays and loams. The parent material ranges from glaciated till to limestone, shale, sandstone, and other bedrock types. In the midwestern United States, many stands are succeeding to types dominated by *Acer saccharum*, *Tilia americana*, *Acer rubrum*, and other mesic tree associates. This succession may be delayed by fire and grazing. In the eastern and southeastern United States, *Liriodendron tulipifera*, *Fraxinus americana*, *Acer rubrum*, and other mesic associates often increase after disturbances, such as clearcutting or windstorms, especially in the absence of fire.

**Range:** This alliance ranges from Ontario, Canada, throughout the midwestern and eastern United States, south to the very northern edges of the Western and Eastern Gulf Coastal Plains.

**States/Provinces:** AL AR CT DE GA IA IL IN KS KY MA MD ME MI MN MO MS? NC NE NH NJ NY OH OK ON PA RI SC TN VA VT WI WV

**Federal Lands:** COE (Dale Hollow?); DOD (Arnold, Fort Benning); DOE (Oak Ridge); NPS (Carl Sandburg Home, Chickamauga–Chattanooga, Great Smoky Mountains, Guilford Courthouse, Kennesaw Mountain, Kings Mountain, Natchez Trace, Ninety Six, Russell Cave, Shenandoah, Shiloh); TVA (Tellico); USFS (Bankhead, Chattahoochee, Cherokee, Daniel Boone, George Washington, Jefferson, Land Between the Lakes, Mark Twain, Nantahala, Oconee, Ouachita, Ozark, Pisgah, St. Francis, Shawnee, Sumter, Talladega, Tuskegee?, Uwharrie)

**Synonymy:** IA6j. Interior Calcareous Oak–Hickory Forest, in part (Allard 1990); Mesic Oak–Hickory Forest, in part (Foti 1994b); Submesic broadleaf deciduous forest, in part (Ambrose 1990a); Oak–Chestnut–Hickory Forest, in part (Ambrose 1990a); Acidic mesophytic forest, in part (Evans 1991); Calcareous mesophytic forest, in part (Evans 1991); Dry-Mesic Oak–Hickory Forest (Schafale and Weakley 1990); Basic Oak–Hickory Forest, Mafic Substrate Variant, in part (Schafale and Weakley 1990); Montane Oak–Hickory Forest, in part (Schafale and Weakley 1990); Basic Oak–Hickory Forest (Nelson 1986); Permesotrophic Forest, in part (Rawinski 1992); Oak–Hickory Forest, in part (Nelson 1986); T1B4aIII. *Quercus rubra*–*Quercus* spp. (Foti et al. 1994); White Oak–Black Oak–Northern Red Oak: 52, in part (Eyre 1980); White Oak: 53, in part (Eyre 1980); Oak–Hickory Forest (Swain and Kearsley 2001)

**References:** Allard 1990, Ambrose 1990a, Andreu and Tukman 1995, Evans 1991, Eyre 1980, Faber-Langendoen et al. 1996, Foti 1994b, Foti et al. 1994, Fountain and Sweeney 1985, Fralish 1988b, Fralish et al. 1991, Golden 1979, Hoagland 1997, Jones 1988a, Jones 1988b, McLeod 1988, Monk et al. 1990, Nelson 1986, Oakley et al. 1995, Oosting 1942, Rawinski 1992, Robertson et al. 1984, Schafale and Weakley 1990, Swain and Kearsley 2001, Wharton 1978

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